

Attorney Docket NC 80,124
Application Serial No. 09/788,407

Remarks

Claims 1, 3-5, 7, 8, and new claims 16-18 are currently in the application. Claims 1 and 2 have been amended. Claims 2, 6, and 9-15 have been cancelled, without prejudice, with applicants reserving the option of filing a divisional application to any subject matter not presently claimed.

Applicants will now address the rejections in the Office Action, as follows.

The rejections under 35 USC § 102(b):

Claims 1-2, 6, and 8 are rejected as anticipated by Cummings et al. (US Pat. No. 3,811,633). The rejection as to the present claims is respectfully traversed.

The claims are directed to a truss boom. Cummings (3811633) shows a collapsible tubular boom, not a truss boom. These are different structures with very specific designs and properties. Cummings refers to his boom as a tubular structure. He does not mention longerons, battens, or frame members, which are elements of a truss boom, but refers to the elements of his boom as ribbons. The technical literature clearly differentiates the differences in configurations and performances among the various types of booms: tubes, and coilable (continuous longeron) trusses and articulated (segmented longeron) trusses, and isogrid tube trusses, and applicants direct the Examiner's attention to any publications discussing same, e.g. NASA Technical Manual 78687, July 1978, by Dr. Martin Mikulas. Furthermore, the examiner refers to the corners 21, 26, etc., of Cummings as "longerons", however, these are not coplanar when the tube of Cummings is flattened, as is evident in Figure 4 of Cummings. The purpose of making the longeron structures coplanar is to eliminate strain that would be created between the longerons of a rolled-up truss if the longerons were not coplanar. In Cummings the outermost members in Figure 4 are sheets 14 and 17, separated by a finite space. There could be unacceptable levels of strain between these sheets if the tube is rolled up as shown in Figure 1.

A rejection on the grounds of anticipation is proper only when every limitation recited in a claim is disclosed in the single reference. Since the cited reference does not fulfill this requirement, Applicant respectfully requests that the rejection on this ground now be withdrawn.

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Claims 1-3 are rejected as anticipated by Schwartzberg et al. (US Pat. No. 4,475,323). The rejection as to the present claims is respectfully traversed.

Schwartzberg shows an articulated (i.e., hinged longeron) boom while the present invention is directed to a coilable (continuous longeron) boom. Applicants reiterate the arguments made above with respect to the differences recognized in the technical field in regard to these two specific and different boom designs. Although these have some components in common, e.g. longerons, battens, diagonals, etc., the particular configuration and spacings of the invention are drawn to continuous, rather than segmented, longerons, unlike Schwartzberg, and the longerons of the invention also differ in how they stow. The articulated boom of Schwartzberg has hinged longerons that fold up to stow, while the coilable (continuous longeron) boom can bend its longerons into a spiral or a circumference. In Schwartzberg's articulated boom the longerons do not bend, but compress by folding at hinges. Furthermore, because this structure folds up, there is no "rigid ladder shaped" structure in this design because the longerons are hinged—i.e., not rigid as in a typical ladder. Figure 5 shows that the stowed longerons are not coplanar (do not lie in the same plane). Accordingly, Schwartzberg does not disclose or anticipate the present invention. Applicants respectfully request that the rejection on these grounds be withdrawn.

Claim 1 is rejected as anticipated by Lyonset al. (US Pat. No. 3,751,863). The rejection as to the present claims is respectfully traversed.

The differences between articulated and coilable booms are discussed above. Similarly, Lyons shows an articulated boom, not a coilable boom. Furthermore, there are no movable battens as the examiner states. Element 4 in Figure 1 of Lyons is described as a wire diagonal. There is also no rigid ladder shaped structure in Lyons. Lyons also does not teach spacing opposing pairs of longerons differently to allow for coplanar stowing, unlike the present invention. Applicants respectfully request that the rejection on these grounds be withdrawn.

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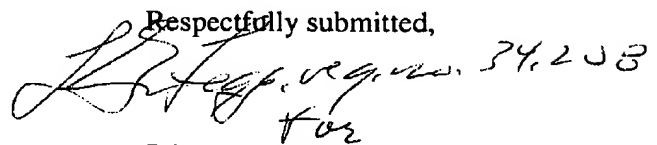
The rejections under 35 USC § 103

Claims 4-5 and 7 are rejected for obviousness. The rejection as to the present claims is respectfully traversed based on the above arguments, and also for the additional limitations recited therein. The base claims and the dependent claims are allowable for the reasons set forth above, and the dependent claims also for the additional limitations recited therein.

Applicants respectfully submit that the claims presently submitted are allowable for the reasons stated above and request that a timely Notice of Allowance be issued in the case. The Examiner is invited to contact Applicants' attorney at the number indicated below should further discussion help advance the case to issuance.

Kindly charge any additional fee, or credit overpayments, to Deposit Account No. 50-0281.

Respectfully submitted,

Handwritten signature of John J. Karasek in cursive script, with the registration number 34,208 written to the right.

for
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